Wisconsin Wetland Compensatory Mitigation

November 18, 2005

Compensation Projects:
Mitigation Project Design

Pat Trochlell

Mitigation Project Design

- **Basic compensation principles**
- **Mitigation requirements**
- **Selecting a mitigation site**
- **Compensation site plan**
  - Baseline conditions
  - Mitigation design
  - Plan submittal

Wetland Compensation Principles

- All high quality sites
- Restoration is preferred
- “In-kind” preferred
- On-site preferred
- Ponds are not approved
- Stormwater or wastewater treatment facilities not approved
- Preservation not compensation
- Buffers required

Mitigation Requirements: Credit Calculation

Compensation ratio is 1.5:1

- **Credit ratio**
  - Restoration 1:1
  - Enhancement 0-1:1
  - Creation 0-1:1
  - Minimum upland buffer 0.1:1
  - Enhanced upland buffer 0.25:1

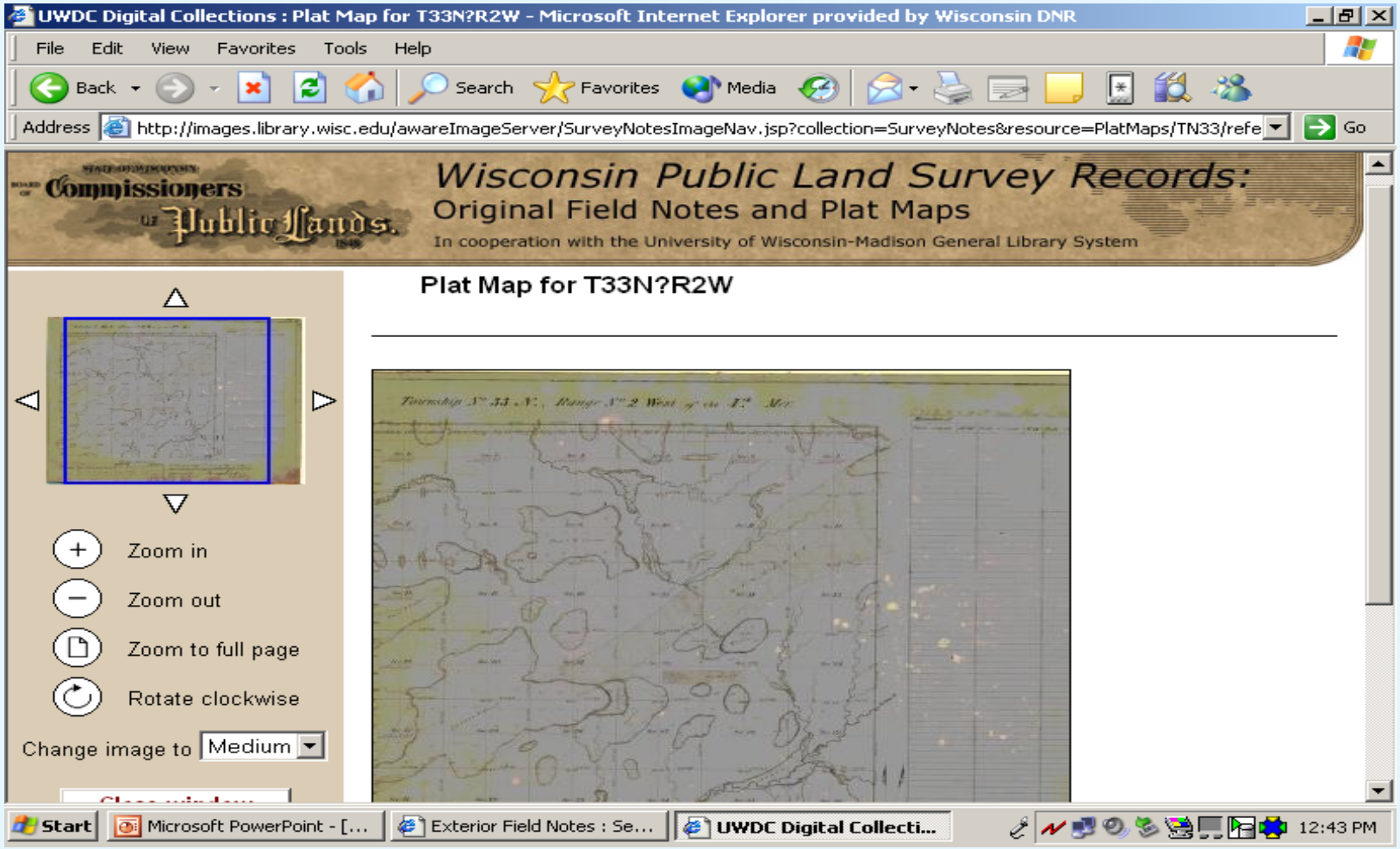
On-Site Projects: Selecting a mitigation site

- **Selecting a suitable mitigation site**
  - Reversible hydrology impacts
  - Adequate buffers
  - No adverse impacts on high quality resources
  - Low maintenance
  - Appropriate for location
  - Sustainable

Tools to Determine Site Suitability

- Site evaluation
- Old maps, original government survey
- Local reference site
- County soil surveys

Original Government Survey



Local Reference Site

- Similar soils and hydrology
- Historic plant communities
- Compensation site potential

County Soil Surveys

- **Soil series information**
  - Original vegetation affects soil development
    - i.e., Spodosols, Mollisols, Alfisols
  - Hydrologic regime in undrained condition
  - Restorability – i.e., soil loss, compaction, structural changes, nutrient enrichment

Evaluating Site Suitability for Restoration

- Human alterations to historic wetlands
- Options to reverse alterations
- Practicable limitations to reversal options
- Likelihood of success

Evaluating Site Suitability for Restoration

Human Alterations	Reversal Options	Limitations
Drainage ditch	Fill ditch	Shared ditch system
Invasive Species	Multi-year herbicide and plant	Landscape setting


White cedar upland forest
Suitable mitigation site?


Ditched and tiled agricultural field
Suitable mitigation site?

Disturbed wetland:

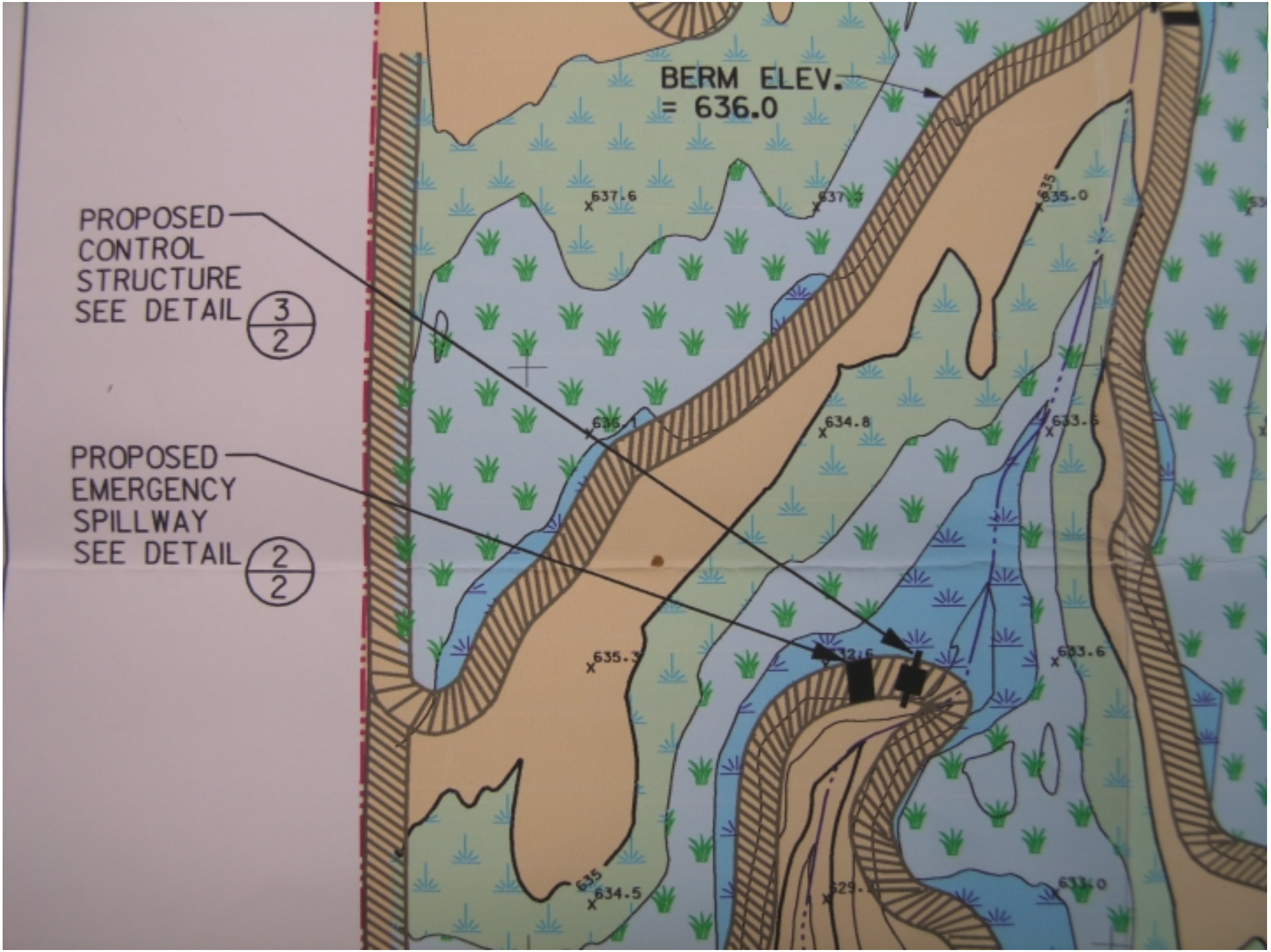
Fill deposited and removed, formerly farmed

Suitable mitigation site?

Project Design

- Low maintenance
- Long-term viability
- Self-sustaining restoration
- Restoration vs. enhancement


Water Control Structures


BERM ELEV.
= 636.0
PROPOSED
CONTROL
STRUCTURE
SEE DETAIL 3/2
PROPOSED
EMERGENCY
SPILLWAY
SEE DETAIL 2/2
637.6
635.0
634.8
635.3
633.6
635
634.5

Berms/Dikes

Scrapes

Wetland Enhancement?

Good Restoration Practices

- Remove fill
- Fill ditches
- Remove tiles
- Remove alluvium
- Restore adequate upland buffers
- Control invasive plants
- Reestablish original contours

Restoration, second year:

- **Seed bank study**
- **Alluvium removal**
- **Reseeding**

Mitigation Plan

- Mitigation summary sheet
- On-site search
- Bank purchase or off-site mitigation if no on-site options available
- **Compensation site plan**

Compensation Site Plan

***Guidelines*, Chapter 7**

- **Executive summary – Appendix B, page 47**
- **Introduction and purpose**
- **Identify plan developers and expertise**
- **General description of site plan**
- **Location of site**
- **Baseline conditions**
- **Site map**
- **Design features**

Compensation Site Plan - continued

- Goals and objectives
- Setting performance standards as success criteria
- Monitoring plan
- Management plan including maintenance
- Site protection
- Implementation schedule
- Financial assurances

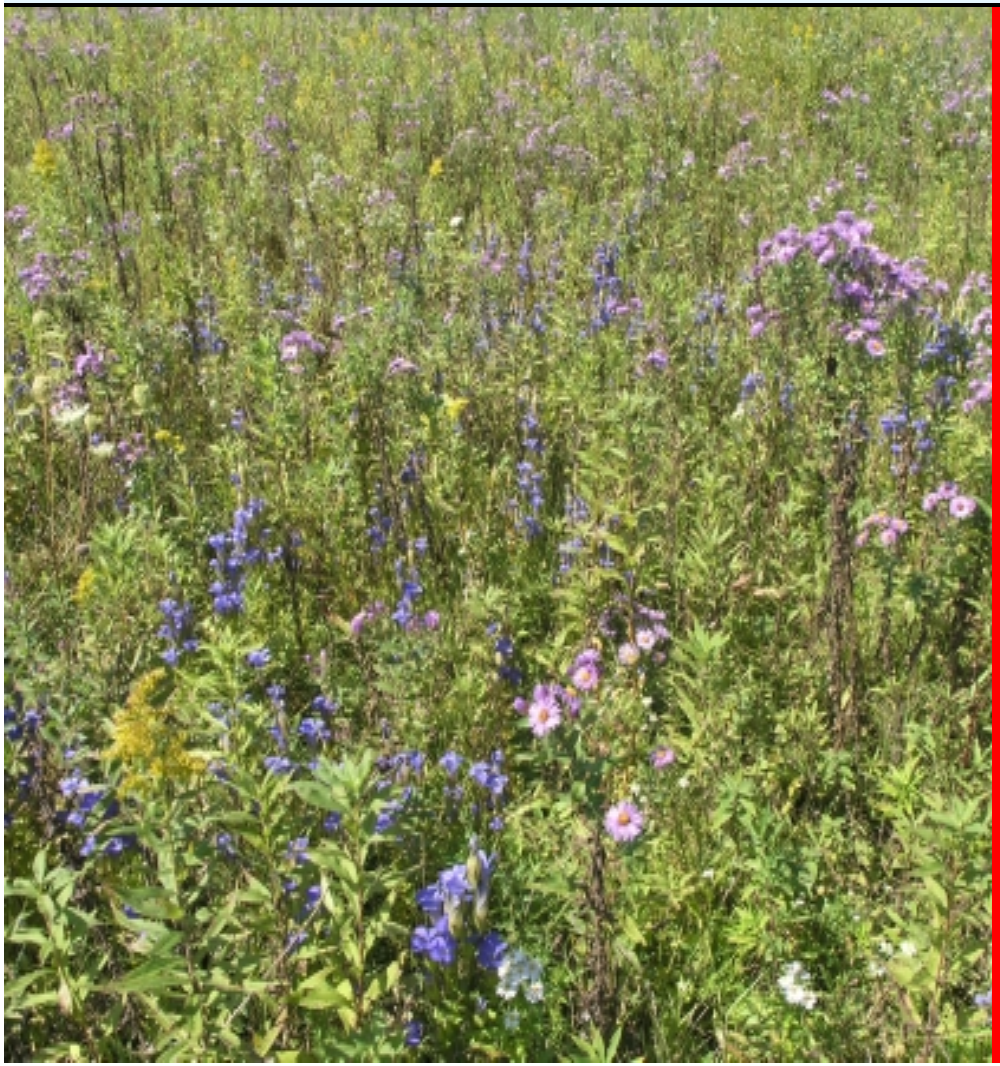
Baseline Conditions

- Contours
- Navigable waters
- Historic wetlands
- Current land uses – on-site and adjacent
- Zoning, floodplain, wetland designations
- Current geology, hydrology, soils & vegetation
- Special resource designation
- Habitat connectivity

Site Design

- Planting list - diversity
- Native species
- Local genotypes
- Suitable for site location
- Maintenance limitations

Plant Community Goal?




Questions?